REMARKS

The above-identified Application has been carefully reviewed with the Final Office Action of May 6, 2010, the Examiner's comments, and the art references cited therein in mind. Claim 1 has been amended and claim 9 has been canceled. In response thereto, Applicants submit the following arguments in support of patentability. Favorable reconsideration is hereby respectfully requested.

Claim Rejections - 35 USC§103

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feinberg et al (2004/0001579) in view of Campanella et al (2001/0017849), the Office taking the position that regarding claim 1, Feinberg et al disclose a method for realizing dynamic adjustment of data bandwidth in transmission equipment (see shared resources to be dynamically allocated and reallocated in paragraph 0019), comprising adding, by a device (50 in figure 2) for realizing dynamic adjustment of data bandwidth in transmission equipment, a control channel (see D channel is used to provide signaling-type information for T-1 in paragraph 0290. Note that when a D channel is used for signaling, the other 23 channels of T-1 will be used for traffic. Without D channel, all 24 channels will be used for traffic. Note also that page 5 of the specification states that time slot 1 is used for control channel. In other words, one out of 24 T-1 channels is allocated for control channel. Therefore, the control channel in the claimed invention is the same as D channel in Feinberg et al) in a trunk link (link T-1 in figure 4 and paragraph 0199) of the transmission equipment. Feinberg et al do not specifically disclose the control channel is for describing occupancy on time slots by a current service. However, Campanella et al disclose a control channel (a time slot control channel (TSCC)) in a trunk link (see TDM in figures 10, 13B, 23) for describing occupancy on time slots by current service (see paragraph 0085 where Campanella et al teach that symbols associated with a channel are extracted from the TDM

frame **time slot locations identified in** the TSCC; see paragraph 0149 where Feinberg et al teach that the TSCC comprises a time slot control word **for each of the time slots 1 through 96.** Note that each time slot control word comprises a channel identifier. See also figure 26 for a diagram depicting a time slot control word). The Office then concludes that, therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the time slot control channel as taught by Campanella et al in the system of Feinberg et al in order to control the allocation of time slots.

For a proper rejection of a claim under 35 U.S.C. §103, the cited combination of references must disclose, teach, or suggest all elements/features of the claim at issue. See, e.g., In re Dow Chemical, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988) and In re Keller, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981) (emphasis added). Applicants respectfully submit the following reasons in support of patentability in accordance with new claims.

1. Claim 1:

Claim 1 provides a method for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising adding by a device for realizing dynamic adjustment of data bandwidth in transmission equipment a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service, and further comprising informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is multiplexed to a direction of the trunk (E1/T1) link;

releasing the time slots from data service by the time slot distribution circuit, and distributing to the voice service;

informing the time slot distribution circuit by the CPU of the time slot having been released by the voice service after voice call finishes; and

distributing the time slots to data service by the time slot distribution circuit, whereby dynamic adjustment of data service is implemented.

With reference to Feinberg et al, they disclose a method for operating an integrated communications system providing voice and data communications to a plurality of users and simulating a key system, wherein a plurality of telephone lines (subscriber lines) are trunked to the integrated communications system providing voice and data communications (Abstract and Figure 2 of Feinberg et al), which actually means to add an access switch in the user side.

There is at least the following distinguishing technical feature between claim 1 of the present invention and Feinberg et al:

The control channel in claim 1 is for describing occupancy on time slots by a current service, and the method of claim 1 further comprises informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is multiplexed to a direction of the trunk (E1/T1) link; releasing the time slots from data service by the time slot distribution circuit, and distributing to the voice service; informing the time slot distribution circuit by the CPU of the time slot having been released by the voice service after voice call finishes; and distributing the time slots to data service by the time slot distribution circuit, whereby dynamic adjustment of data service is implemented.

With the above distinguishing technical feature, the claimed invention, compared with the cited prior art, can implement **dynamic adjustment of data bandwidth while ensuring voice services**, and **effectively making use of the (E1/T1) trunk bandwidth without resulting in error codes or interruption of data service during bandwidth adjustment**, thus user's data service bandwidth is enhanced.

Feinberg et al neither disclose the above distinguishing technical features of claim 1 of the present application, nor solve the technical problem to be solved in the present application.

The Applicants' respectfully disagree with the Examiner's opinion in the last paragraph

on page 5 against claim 9, the features of which are included in the currently amended claim 1.

In Feinberg et al, the word "resource" is a general word which can be high speed dedicated resources such as T-1, PRI, ATM, VDSL, HDSL, DDS, wireless, cascade, proprietary and/or twisted pair analog lines from a local telephone company (see paragraph [0073]), or host processor/system resources 70, which preferably include a computer powered by, e.g. a commercially available microprocessor and operating system (see paragraph [0076]), or storage resources like RAM, ROM, hard disk, etc. (see paragraph [0076]). No disclosure in Feinberg et al teaches that the resource to be dynamically allocated and re-allocated is a time slot in a trunk link used in a circuit-switch (e.g. PCM) system.

Furthermore, paragraph [0095] of Feinberg et al only generally describes that "data and voice communications may be allocated and/or controlled with respect to , for example, the various types of voice/data network services that are available to communications system. Such information may include the current cost of utilizing various resources, and also priority rules..., for example, phone calls may be assigned a priority 1...., and other data communication a priority 6". From the context above, there is no reason for a skilled person to regard such general "allocate/reallocate resources" as "releasing a time slot from data service in a trunk link for voice service, and distributing the time slot to data service when voice service having finished", thus it is not correct to consider "allocate/reallocate resources" in Feinberg et al as equivalent to the features in claim 1 of the present invention. The interpretation of the "allocate/reallocate resources" in Feinberg et al by the Examiner was actually made with **hindsight** in the knowledge of the solution provided by the present invention and it is, of course, not permissible.

Campanella et al fail to cure these deficiencies of Feinberg et al. In particular, Campanella et al disclose a time slot control channel (TSCC) containing information identifying the program providers carried in the TDM frame and in which locations of the 96 PRCs each

program provider's channel can be found (paragraphs 0084-0149 of Campanella et al), and time slot control word comprising at least one field selected from the group consisting of a broadcast channel identifier type field, a broadcast channel identifier number field, a last prime rate channel flag, a format identifier field, and a broadcast audience field (paragraph 0149 and table 4, claim 23 of Campanella et al). It can be seen that the time slot control word disclosed by Campanella et al is for describing the physical attribute such as broadcast channel identifier, last prime rate channel flag, format identifier, and broadcast audience of the TDM time slots, and further to control the recovery of prime rate channels corresponding to a selected one of broadcast channels by at least one of said remote receivers (claim 23 of Campanella et al).

Therefore it can be seen that in Campanella et al, a time slot control channel with time slot control word is for describing the physical attribute of the TDM time slots so as to identify the channels and control the recovery of prime rate channels. In contrast, the control channel described in claim 1 of this application is for describing **occupancy** on time slots **by a current service** so as to dynamically adjust the data bandwidth. Thus the function and purpose of the control channel in claim 1 of this application is different from that of the time slot control channel disclosed by Campanella et al.

Furthermore, **Campanella et al do not disclose a scheme of dynamically adjusting data bandwidth for implementing voice service or data service as described in claim 1 of the present invention**.

In summary, Campanella et al neither disclose the above distinguishing technical feature, nor provide any relative teachings of applying the above distinguishing technical feature in Feinberg et al to solve the technical problem to be solved in this application. **When a skilled person is seeking to achieve dynamic adjustment of data bandwidth, then when studying Campanella et al, there is nothing to suggest such a feature of the present invention**.

The presently claimed invention provides a method and a device in a circuit-switch

(e.g.PCM) system, which is adapted to carry both voice and data service. A time slot which is serving for data service in a trunk link of the system can be released for voice service according to the added control channel and the voice call condition, and when the voice service having finished, the time slot is distributed back to data service. **A unique feature of the Applicants' device not found in the prior art is that the circuit-switch system which normally carries voice service can also support data service and the dynamic distribution of the time slots between voice and data service in the circuit-switch system**. Neither Feinberg et al nor Campanella et al disclose or hint the subject matter of the present invention.

Thus it is **non-obvious** to one of ordinary skill in the art **at the time of the instant application to incorporate the teachings of Campanella et al into Feinberg et al**.

The above technical feature is not the common technical means in the art.

Therefore, to one of ordinary skill in the art, the subject matter of claim 1 is non-obvious.

Therefore, claim 1 is in conformity with the provisions of 35 U. S. C. 103(a) and should be allowed.

2. Claims 2-5 and 10:

Dependent claims 2-5 and 10 depend on independent claim 1 directly or indirectly, and are thus allowable for at least the same reasons as claim 1.

3. Claim 6:

Regarding claim 6, the Office takes the position that Feinberg et al disclose a device for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising: a control word (control signal 92 in figure 3) process circuit (70), a time slot distribution circuit (bandwidth manager 3 1 in figure 4 and allocate/re-allocate resources 99 in figure 5) and a CPU interface circuit (see processor in paragraph 0076), wherein the control word process circuit is

designed to complete extraction (see paragraph 0076 and control signal 92 received at the process circuit, the extracting is performed when the process circuit receives a control signal such as signal 92. see also framing in paragraph 0010) and insertion of control information (inserting is performed when the process circuit wants to send a control signal to another elements in the system, control signal 92 is sent from the process circuit 70 in figure 3. See also deframing in paragraph 0010) in control channel of EIIT1 link (see D signaling channel provide signaling information for T-1 in paragraph 0290); the time slot distribution circuit is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data (see voice and data in paragraph 0009. See deframing in paragraph 0010). Feinberg et al do not specifically disclose controlling on time slot distribution. However, Campanella et al disclose a control channel (time slot control channel) TSCC) controlling time slot distribution (see paragraph 0149 where Campanella et al teach the use of a time slot control word for each of 96 time slots to identify time slot distribution/channel allocation). The Office concludes that, therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the time slot control channel as taught by Campanella et al in the system of Feinberg et al in order to control the allocation of time slots.

Claim 6 provides a device for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising: a control word process circuit, a time slot distribution circuit and a CPU interface circuit, wherein the control word process circuit is designed to complete extraction and insertion of control information in control channel of E1/T1 trunk link; the time slot distribution circuit is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data; the CPU interface circuit implements controlling on time slot distribution. The arguments advanced above in support of claim 1 are also applicable to claim 6.

This claim provides a device which is adapted to execute the method as defined in claim

1, and is thus allowable for at least the same reasons as claim 1.

Therefore, claim 6 is in conformity with the provisions of 35 U. S. C. 103(a) and should be allowed.

4. Claims 7-8:

Dependent claims 7-8 depend on independent claim 6, and are thus allowable for at least the same reasons as claim 6.

CONCLUSION

With the amendments presented herein, it is believed that all the claims remaining in the Application are in condition for allowance. Early and favorable action in this regarding is hereby respectfully requested. Should there be any minor informalities remaining, the Examiner is respectfully requested to call the undersigned attorney so that this case may be passed to issue at an early date.

Respectfully submitted,

James W. Kayden; Reg. No.: 31,532

THOMAS, KAYDEN,
HORSTEMEYER & RISLEY, L.L.P.
Suite 1500
600 Galleria Parkway N.W.
Atlanta, Georgia 30339
(770) 933-9500